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01-29-02

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SEQUENCE LISTING

<110> Estell, David A.
<120> Proteases From Gram-Positive Organisms
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<140> US 09/932,183
<141> 2001-08-17
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Thr Thr Arg Glu Ser Gly Asn Ile Val Gly Asn Ser Leu Lys Thr Ile		
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Gln Lys Gln Asn Thr Ser Ile Gly Val Ala Gly Ile Tyr Gln Leu Ser		
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Lys Thr Ala Leu Arg Gly Leu Leu Val Ser Thr Leu Val Gly Gly Ala		
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Leu Ala Leu Lys Lys Gln Glu Thr Arg Asp Ser Ala Lys Lys Thr Phe		
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Glu	Val	Asn	Asn	Ala	Ile	Lys	Thr	Leu	Asn	Ala	Asp	Thr	Leu	Arg	Ile	1205	1210	1215
Asp	Ser	Leu	Lys	Lys	Leu	Arg	Lys	Glu	Arg	Lys	Leu	Asp	Met	Ser	Glu	1220	1225	1230
Ala	Glu	Leu	Ser	Asp	Leu	Glu	Val	Lys	Ser	Ile	Asn	Asn	Val	Ala	Asp	1235	1240	1245
Ala	Lys	Lys	Glu	Leu	Lys	Lys	Leu	Glu	Glu	Lys	Met	Leu	Gln	Pro	Gly	1250	1255	1260
Gly	Tyr	Ser	Asn	Ser	Gln	Ile	Glu	Ala	Met	Gln	Ser	Val	Lys	Ser	Ala	1265	1270	1275
Leu	Glu	Ser	Tyr	Ile	Ser	Ala	Ser	Glu	Glu	Ala	Thr	Ser	Thr	Gln	Glu	1285	1290	1295
Met	Asn	Lys	Gln	Ala	Leu	Val	Glu	Ala	Gly	Thr	Ser	Leu	Glu	Asn	Trp	1300	1305	1310
Thr	Asp	Gln	Gln	Glu	Lys	Ala	Asn	Glu	Glu	Thr	Lys	Thr	Ser	Met	Tyr			

1315	1320	1325
Val Val Asp Lys Tyr Lys Glu Ala Leu Glu Lys Val Asn Ala Glu Ile		
1330	1335	1340
Asp Lys Tyr Asn Lys Gln Val Asn Asp Tyr Pro Lys Tyr Ser Gln Lys		
1345	1350	1355
Tyr Arg Asp Ala Ile Lys Lys Glu Ile Lys Ala Leu Gln Gln Lys Lys		
1365	1370	1375
Lys Leu Met Gln Glu Gln Ala Lys Leu Leu Lys Asp Gln Ile Lys Ser		
1380	1385	1390
Gly Asn Ile Thr Gln Tyr Gly Ile Val Thr Ser Thr Thr Ser Ser Gly		
1395	1400	1405
Gly Thr Pro Ser Ser Thr Gly Gly Ser Tyr Ser Gly Lys Tyr Ser Ser		
1410	1415	1420
Tyr Ile Asn Ser Ala Ala Ser Lys Tyr Asn Val Asp Pro Ala Leu Ile		
1425	1430	1435
Ala Ala Val Ile Gln Gln Glu Ser Gly Phe Asn Ala Lys Ala Arg Ser		
1445	1450	1455
Gly Val Gly Ala Met Gly Leu Met Gln Leu Met Pro Ala Thr Ala Lys		
1460	1465	1470
Ser Leu Gly Val Asn Asn Ala Tyr Asp Pro Tyr Gln Asn Val Met Gly		
1475	1480	1485
Gly Thr Lys Tyr Leu Ala Gln Gln Leu Glu Lys Phe Gly Gly Asn Val		
1490	1495	1500
Glu Lys Ala Leu Ala Ala Tyr Asn Ala Gly Pro Gly Asn Val Ile Lys		
1505	1510	1515
Tyr Gly Gly Ile Pro Pro Phe Lys Glu Thr Gln Asn Tyr Val Lys Lys		
1525	1530	1535
Ile Met Ala Asn Tyr Ser Lys Ser Leu Ser Ser Ala Thr Ser Ser Ile		
1540	1545	1550
Ala Ser Tyr Tyr Thr Asn Asn Ser Ala Phe Arg Val Ser Ser Lys Tyr		
1555	1560	1565
Gly Gln Gln Glu Ser Gly Leu Arg Ser Ser Pro His Lys Gly Thr Asp		
1570	1575	1580
Phe Ala Ala Lys Ala Gly Thr Ala Ile Lys Ser Leu Gln Ser Gly Lys		
1585	1590	1595
Val Gln Ile Ala Gly Tyr Ser Lys Thr Ala Gly Asn Trp Val Val Ile		
1605	1610	1615
Lys Gln Asp Asp Gly Thr Val Ala Lys Tyr Met His Met Leu Asn Thr		
1620	1625	1630
Pro Ser Val Lys Ala Gly Gln Ser Val Lys Ala Gly Gln Thr Ile Gly		
1635	1640	1645
Lys Val Gly Ser Thr Gly Asn Ser Thr Gly Asn His Leu His Leu Gln		
1650	1655	1660
Ile Glu Gln Asn Gly Lys Thr Ile Asp Pro Glu Lys Tyr Met Gln Gly		
1665	1670	1675
Ile Gly Thr Ser Ile Ser Asp Ala Ser Gln Ala Glu Ala Glu Arg Gln		
1685	1690	1695
Gln Gly Ile Ala Gln Ala Lys Ser Asp Leu Leu Ser Leu Gln Gly Asp		
1700	1705	1710
Ile Ser Ser Val Asn Asp Gln Ile Gln Glu Leu Gln Tyr Glu Leu Val		
1715	1720	1725
Gln Ser Lys Leu Asp Glu Phe Asp Lys Arg Ile Gly Asp Phe Asp Val		
1730	1735	1740
Arg Ile Ala Lys Asp Glu Ser Met Ala Asn Arg Tyr Thr Ser Asp Ser		
1745	1750	1755
		1760

Lys Glu Phe Arg Lys Tyr Thr Ser Asp Gln Lys Lys Ala Val Ala Glu
1765 1770 1775
Gln Ala Lys Ile Gln Gln Gln Lys Val Asn Trp Ile Gln Lys Glu Ile
1780 1785 1790
Lys Thr Asn Lys Ala Leu Asn Ser Ala Gln Arg Ala Gln Leu Gln Glu
1795 1800 1805
Glu Leu Lys Gln Ala Lys Leu Asp Leu Ile Ser Val Gln Asp Gln Val
1810 1815 1820
Arg Glu Leu Gln Lys Gln Leu Val Gln Ser Lys Val Asp Glu Thr Leu
1825 1830 1835 1840
Lys Ser Ile Glu Lys Ser Ser Ser Lys Thr Gln Gly Lys Ile Lys Asp
1845 1850 1855
Val Asp Asn Lys Ile Ser Met Thr Glu Glu Asp Glu Asp Lys Val Lys
1860 1865 1870
Tyr Tyr Ser Lys Gln Ile Lys Leu Ile Gln Gln Gln Gln Lys Glu Ala
1875 1880 1885
Lys Lys Tyr Ile Lys Gln Leu Glu Glu Gln Lys Lys Ala Ala Lys Gly
1890 1895 1900
Phe Pro Asp Ile Gln Glu Gln Ile Thr Glu Glu Met Gln Asn Trp Lys
1905 1910 1915 1920
Asp Lys Gln Lys Asp Phe Asn Leu Glu Leu Tyr Asn Thr Lys Lys Ser
1925 1930 1935
Ile Lys Asp Ile Tyr Lys Ser Leu Ala Asp Glu Val Val Ser Ile Tyr
1940 1945 1950
Lys Glu Met Tyr Glu Lys Met Arg Asp Ile Glu Leu Glu Ala His Gln
1955 1960 1965
Lys Ala Thr Gln Asp Leu Ile Asp Glu Ile Asp Lys Thr Asp Asp Glu
1970 1975 1980
Ala Lys Phe Gln Lys Glu Leu Lys Glu Arg Gln Asp Ser Ile Gln Lys
1985 1990 1995 2000
Leu Thr Asp Gln Ile Asn Gln Tyr Ser Leu Asp Asp Ser Glu Phe Gly
2005 2010 2015
Lys Ser Lys Val Lys Glu Leu Thr Glu Gln Leu Gln Lys Glu Gln Leu
2020 2025 2030
Asp Leu Asp Asp Phe Leu Lys Asp Arg Glu Ser Asn Lys Arg Lys Glu
2035 2040 2045
Ala Leu Gln Asp Gln Leu Glu Lys Asp Glu Glu Ser Ile Asn Asn Lys
2050 2055 2060
Tyr Asp Asn Leu Val Asn Asp Glu Arg Ala Phe Lys Lys Leu Glu Asp
2065 2070 2075 2080
Lys Ile Met Asn Gly Lys Ile Thr Asp Ile Ala Lys Gln Leu Asn Glu
2085 2090 2095
Phe Ser Lys Phe Ile Asn Thr Asn Met Glu Ser Ile Gly Lys Ser Ile
2100 2105 2110
Ser Asn Asn Leu Ile Asp Lys Leu Lys Glu Ala Ser Asn Ala Leu Asn
2115 2120 2125
Thr Ala Val Lys Gly Asn Thr Thr Gly Lys Lys Val Ser Ser Phe Ala
2130 2135 2140
Ser Gly Gly Tyr Thr Gly Thr Gly Leu Gly Ala Gly Lys Leu Ala Phe
2145 2150 2155 2160
Leu His Asp Lys Glu Leu Ile Leu Asn Lys Thr Asp Thr Ala Asn Ile
2165 2170 2175
Leu Asp Thr Val Lys Ala Val Arg Glu Thr Ala Val Asp Asp Ser Pro
2180 2185 2190
Lys Trp Gly Gln Gly Val Lys Leu Ala Asp Leu Ile Lys Lys Gly Ile

2195	2200	2205
Thr Ser Ile Pro Ser Leu Val	Pro Asn Val Asn Gln Ser Met Leu Thr	
2210	2215	2220
Asn Ser Leu Ile Pro Asn Leu Lys Lys Ile Glu Ile Pro Ser Lys Thr		
2225	2230	2235
Ile Ala Ser Ser Gly Asp Lys Thr Ile Asn Leu Thr Asn Thr Phe His		
	2245	2250
Ile Asp Lys Leu Ile Gly Gly Glu Ser Gly Ala Arg Ser Met Phe Glu		
	2260	2265
Ser Ile Lys Asn Glu Val Val Lys Leu Asn Gly Ser Met		
2275	2280	2285

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<212> PRT

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20 25 30	
Lys Arg Gly Phe Asp Ala Gln Val Arg Asp Val Leu Gln Gln Leu Ser	
35 40 45	
Arg Arg Tyr Tyr Gly Phe Glu Tyr Gln Leu Arg Gln Ala Ala Ala	
50 55 60	
Arg Lys Ala Val Gly Glu Asp Gly Leu Asn Ala Ala Ser Ala Ala Leu	
65 70 75 80	
Leu Gly Leu Leu Arg Glu Gly Ala Lys Val Ser Ala Val Gln Gly Gly	
85 90 95	
Asn Pro Leu Gly Ala Tyr Ala Gln Thr Phe Gln Arg Leu Phe Gly Thr	
100 105 110	
Pro Ala Ala Glu Leu Leu Gln Pro Ser Asn Arg Val Ala Arg Gln Leu	
115 120 125	
Gln Ala Lys Ala Ala Leu Ala Pro Pro Ser Asn Leu Met Gln Leu Pro	
130 135 140	
Trp Arg Gln Gly Tyr Ser Trp Gln Pro Asn Gly Ala His Ser Asn Thr	
145 150 155 160	
Gly Ser Gly Tyr Pro Tyr Ser Ser Phe Asp Ala Ser Tyr Asp Trp Pro	
165 170 175	
Arg Trp Gly Ser Ala Thr Tyr Ser Val Val Ala Ala His Ala Gly Thr	
180 185 190	
Val Arg Val Leu Ser Arg Cys Gln Val Arg Val Thr His Pro Ser Gly	
195 200 205	
Trp Ala Thr Asn Tyr Tyr His Met Asp Gln Ile Gln Val Ser Asn Gly	
210 215 220	
Gln Gln Val Ser Ala Asp Thr Lys Leu Gly Val Tyr Ala Gly Asn Ile	
225 230 235 240	
Asn Thr Ala Leu Cys Glu Gly Gly Ser Ser Thr Gly Pro His Leu His	
245 250 255	
Phe Ser Leu Leu Tyr Asn Gly Ala Phe Val Ser Leu Gln Gly Ala Ser	
260 265 270	
Phe Gly Pro Tyr Arg Ile Asn Val Gly Thr Ser Asn Tyr Asp Asn Asp	

		275					280						285				
Cys	Arg	Arg	Tyr	Tyr	Phe	Tyr	Asn	Gln	Ser	Ala	Gly	Thr	Thr	His	Cys		
	290					295					300						
Ala	Phe	Arg	Pro	Leu	Tyr	Asn	Pro	Gly	Leu	Ala	Leu						
305					310					315							